Ok to enter RWW 10/15/08

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Kenneth M. Buckland
Serial No.:	09/657,068
Filing Date:	September 7, 2000
Confirmation No.:	1585
Group Art Unit:	2619
Examiner:	Robert W. Wilson
Title:	METHOD AND SYSTEM FOR PROCESSING TRAFFIC IN AN ACCESS NETWORK

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

REPLY BRIEF

In response to the Examiner's Answer issued July 2, 2008, Applicant respectfully submits this brief in reply. For the convenience of the Board, the appeal brief is repeated herein and remarks concerning the Examiner's Answer are provided in a paragraph at the end of the Arguments section.

REAL PARTY IN INTEREST

The present application was assigned to Cisco Technology, Inc., a California corporation, as indicated by an assignment from the inventor recorded on September 7, 2000 in the Assignment Records of the United States Patent and Trademark Office at Reel 011095, Frames 0506-0508.

RELATED APPEALS AND INTERFERENCES

There are no known appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

STATUS OF CLAIMS

Claims 1, 3-7, 9-16, 18-33, 35-38, and 40 stand rejected pursuant to a Final Action mailed July 26, 2007. Claims 2, 8, 17, 34, and 39 have been canceled without prejudice or disclaimer. Claims 1, 3-7, 9-16, 18-33, 35-38, and 40 are all presented for appeal.

STATUS OF AMENDMENTS

A Response to Examiner's Action was filed on October 12, 2004 in response to an Official Action issued July 12, 2004. Claims 1, 4-6, 10, 12, 16, 18, 20, and 31 were amended and Claims 2, 8, 17, 34, and 39 were canceled without prejudice or disclaimer. A Response to Examiner's Final Action was filed on May 31, 2005 in response to a Final Action issued March 29, 2005. The Examiner did not enter the Response to Examiner's Final Action, withdrew the finality of the Final Action, and issued a new Office Action on June 16, 2005. A Response to Examiner's Action was filed on September 16, 2005 in response to the Office Action of June 16, 2005. Claims 1, 6, 16, 18, 20, 26, and 31 were amended. A Response to Examiner's Final Action was filed on December 19, 2005 in response to a Final Action issued October 17, 2005. Claims 6, 18, 20, and 31 were amended. The Examiner issued an Advisory Action dated January 11, 2006 which stated that the Response to Examiner's Final Action was entered and considered but that it did not place the application in condition for allowance. A Notice of Appeal and Request for Pre-Appeal Brief Review were filed on February 17, 2006. A Notice of Panel Decision from Pre-Appeal Brief Review was issued on April 5, 2006 reopening prosecution. A Response to Examiner's Action was filed on October 2, 2006 in response to an Office Action issued June 2, 2006. Claims 1, 14, 16, 20, and 26 were amended. A Response to Examiner's Final Action was filed on February 13, 2007 in response to a Final Action issued December 13, 2006. No further amendments were made to the claims. A Notice of Appeal and Request for Pre-Appeal Brief Review were filed on March 19, 2007 in response to an Advisory Action issued March 13, 2007. A Notice of Panel Decision from Pre-Appeal Brief Review was issued on June 8, 2007 reopening prosecution again.

A Response to Examiner's Final Action was filed on September 26, 2007 in response to a Final Action issued July 26, 2007. Claims 1, 16, 20, and 26 were amended. A Notice of Appeal and Request for Pre-Appeal Brief Review were filed on January 7, 2008 in response to an Advisory Action issued December 5, 2008. A Notice of Panel Decision from Pre-Appeal Brief Review was issued on February 21, 2008 indicating that an appeal is to proceed to the Board of Patent Appeals and Interferences.

SUMMARY OF CLAIMED SUBJECT MATTER

With respect to Independent Claim 1, there is provided a method for processing traffic in an access network. (See FIGUREs 2 and 5 and page 9, lines 16-21). The method includes receiving (160) a plurality of ingress traffic streams, each ingress traffic stream including a plurality of packets having a destination address, wherein the packets are Internet Protocol (IP) packets and each include an IP destination address. (See FIGUREs 2 and 5 and page 19, lines 1-7). The ingress traffic streams are aggregated (166) into a single combined traffic stream without regard to any destination of any packet from any ingress traffic stream. (See FIGUREs 2 and 5 and page 19, lines 8-15). The combined traffic stream is transmitted (172) to a backbone network (16) for routing. (See FIGUREs 2 and 5 and page 19, lines 16-20).

With respect to Independent Claim 16, there is provided a system (20) for processing traffic in an access network (14). (See FIGUREs 2 and 5 and page 9, lines 16-21). The system (20) includes means (44) for aggregating a plurality of ingress traffic streams from customer premise equipment (CPE) (12) into a single combined traffic stream for transmission to a backbone network (16). The system (20) also includes means (70) for routing egress traffic received from the backbone network (16) to CPEs (12) using a static routing table (74). (See FIGUREs 2 and 6 and page 15, lines 24-30). The ingress and egress traffic include a plurality of Internet Protocol (IP) packets each having an IP address, wherein the IP address of IP packets in the egress traffic stream used as an index to the static routing table. (See FIGUREs 2 and 6 and page 15, lines 24-30). The plurality of ingress traffic streams are aggregated into the single combined traffic stream without regard to any destination of any IP packet from any ingress

traffic stream. (See FIGUREs 2 and 5 and page 9, lines 16-21).

With respect to dependent Claim 18, the system (20) further includes means (80) for segmenting IP packets into asynchronous transport mode (ATM) adaption layer (AAL) cells, wherein the AAL cells include either or both of a virtual private interface and virtual connection interface (VPI/VCI) address generated from the IP addresses of the IP packets. (See FIGUREs 2 and 7 and page 14, lines 1-7). The system (20) also includes means (82) for switching the AAL cells within the access network (14). (See FIGUREs 2 and 7 and page 14, lines 11-22). The system also includes means (80) for reassembling the AAL cells into outgoing IP packets. (See FIGUREs 2 and 7 and page 14, lines 7-10).

With respect to Independent Claim 20, there is provided a method for routing traffic in an access network (14). (See FIGUREs 2, 7, and 8 and page 9, lines 16-25). The method includes receiving (200) ingress Internet Protocol (IP) packets from customer premise equipment (CPE) (12) with each IP packet having an IP address. (See FIGUREs 2 and 7 and page 21, lines 3-5). Egress IP packets are received (230) from a backbone network (16) for delivery to the CPE (12). (See FIGUREs 2 and 8 and page 22, lines 17-20). The ingress IP packets are segmented (208) at a CPE interface (48) of an access network (14) into ingress asynchronous transport mode (ATM) adaption layer (AAL) cells wherein the ingress AAL cells include either or both of a virtual private interface and virtual connection interface (VPI/VCI) address generated from the IP addresses of the IP packets. (See FIGUREs 2 and 7 and page 21, lines 9-14). The egress IP packets are segmented (238) at a network interface (70) into egress AAL cells. The egress AAL cells are provided (242) to the customer premises

equipment (12). (See FIGUREs 2 and 8 and page 23, lines 1-3). The ingress AAL cells are aggregated (212) in the access network (14) into a single combined traffic stream without regard to any destination of any packet from the customer premises equipment (12). (See FIGUREs 2 and 7 and page 19, lines 8-15).

With respect to Independent Claim 26, there is provided a system (20) for processing traffic in an access network (14). (See FIGUREs 2 and 5 and page 9, lines 16-21). The system (20) includes logic stored in a computer processable medium operable to receive (160) a plurality of ingress traffic streams, each ingress traffic stream including a plurality of Internet Protocol (IP) packets having an IP address. (See FIGUREs 2 and 5 and page 19, lines 1-7). The ingress traffic streams are aggregated (166) into a combined traffic stream without regard to any destination of any IP packet in any ingress traffic stream. (See FIGUREs 2 and 5 and page 19, lines 8-15). The combined traffic stream is transmitted (172) to a backbone network (16) for routing based on the IP addresses. (See FIGUREs 2 and 5 and page 19, lines 16-20).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Did the Examiner err in concluding that Claims 1, 3-7, 9-16, 18, and 19 were anticipated under 35 U.S.C. §102(e) by U. S. Patent No. 6,504,844 issued to Keller-Tuberg?

2. Did the Examiner err in concluding that Claims 20-25 were obvious under 35 U.S.C. §103(a) by U. S. Patent No. 6,504,844 issued to Keller-Tuberg in view of U.S. Patent No. 6,016,319 issued to Ksirasagar?

3. Did the Examiner err in concluding that Claims 26-33, 35-38, and 40 were obvious under 35 U.S.C. §103(a) by U. S. Patent No. 6,504,844 issued to Keller-Tuberg?

ARGUMENT

Claims 1, 3-7, 9-16, 18, and 19 stand rejected under 35 U.S.C. §102(a) as being anticipated U.S. Patent No. 6,504,844 issued to Keller-Tuberg. To anticipate a claim under 35 U.S.C. §102(e), a single prior art reference must teach each and every limitation as set forth in the claims. Since the cited prior art reference does not teach each and every element set forth in the claims, Applicant respectfully traverses this rejection.

Independent Claims 1 and 16 recite in general an ability to aggregate ingress traffic streams into a single combined traffic stream without regard to any destination of any packet from any ingress traffic stream. By contrast, the Keller-Tuberg patent merely discloses multiplexing traffic from a large number of subscribers into a smaller number of ATM flows. (See col. 2, lines 43-45, of the Keller-Tuberg patent). Thus, the Keller-Tuberg patent fails to disclose an ability to aggregate traffic streams into a single combined traffic stream as required by the claimed invention. In addition, the Keller-Tuberg patent discloses multiplexing packet flows from many individual subscribers into shared packet flows based on the ISP destination according to VP/VC identifiers. (See FIGURE 2, multiplexing table, and col. 5, line 66, to col. 6, line 5, of the Keller-Tuberg patent). The Keller-Tuberg patent specifically teaches using path identifiers associated with a destination ISP to multiplex the traffic. (See col. 5, lines 54-60, of the Keller-Tuberg patent). As a result, the Keller-Tuberg patent expressly teaches away from a capability of aggregating a plurality of ingress traffic streams into a single combined traffic stream without regard to any destination of any packet from any ingress traffic stream as required by the claimed invention.

Thus, not only does the Keller-Tuberg patent fail to disclose multiplexing a plurality of ingress traffic streams into a single combined traffic stream as required by the claimed invention, the Keller-Tuberg patent also fails to perform its multiplexing without regard to any destination of any packet from any ingress stream as provided in the claimed invention. Therefore, Applicant respectfully submits that Claims 1, 3-7, 9-12, 13-16, 18, and 19 are not anticipated by the Keller-Tuberg patent.

In the Examiner's Answer, the Examiner states that neither a virtual path identifier nor virtual circuit identifier is a destination address. However, the virtual path identifier and the virtual circuit identifier are associated with a destination ISP. Subscriber packets destined for a particular ISP are given a particular VP/VC identifier. A multiplexing table is used to map the destination ISP to the particular VP/VC identifier. ATM cells having the same VP/VC identifier are multiplexed into the same VP/VC flow to a corresponding ISP. Thus, the destination of the packet determines what VP/VC flow is associated with the packet carried in the ATM cell. As a result, the Keller=Tuberg patent fails to aggregate a plurality of ingress traffic streams without regard to any destination of any packet from any ingress traffic stream as required by the claimed invention. Further, the Keller-Tuberg patent requires a separate VP/VC flow for each ISP. As a result, there is no aggregation of traffic streams into a single combined traffic stream in the Keller-Tuberg patent as required by the claimed invention. Therefore, the claimed invention is not anticipated by the Keller-Tuberg patent.

With respect to the 35 U.S.C. §112, first and second paragraph rejections, Applicant removed the term 'path' from

the claims objected to by the Examiner so that aggregation of ingress traffic streams into a single combined traffic stream is performed without regard to any destination of any packet from any ingress traffic stream since routing decisions are not made in accordance with page 13, lines 3-18, of Applicant's specification as provided in Applicant's Response to Examiner's Final Action of September 26, 2007 and entered by the Examiner.

Based on the foregoing reasons, the Examiner has failed to show that the Keller-Tuberg patent teaches each and every limitation of each and every one of Applicant's claims. Therefore, Applicant respectfully submits that Claims 1, 3-7, 9-16, 18, and 19 are not anticipated by the Keller-Tuberg patent. In addition, Applicant respectfully submits that the claimed invention is in accordance with 35 U.S.C. §112, first and second paragraphs.

2. Claims 20-25 stand rejected under 35 U.S.C. §103(a) as being obvious over U. S. Patent No. 6,504,844 issued to Keller-Tuberg in view of U.S. Patent No. 6,016,319 issued to Ksirasagar. Independent Claim 20 has a similar limitation found in Claims 1 and 16 of aggregating the ingress AAL cells in the access network into a single combined traffic stream without regard to any destination of any packet from the customer premises equipment. As shown above, the Keller-Tuberg patent fails to disclose this limitation. Moreover, the Ksirasagar patent does not include any additional disclosure combinable with the Keller-Tuberg patent that would be material to patentability of these claims. Therefore, Applicant respectfully submits that Claims 20-25 are patentably distinct from the proposed Keller-Tuberg - Ksirasagar combination.

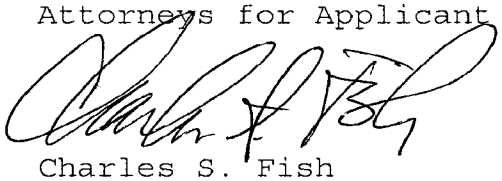
3. Claims 26-33, 35-38, and 40 stand rejected under 35 U.S.C. §103(a) as being obvious over U. S. Patent No. 6,504,844 issued to Keller-Tuberg. Independent Claim 26 includes the similar limitation found in Claims 1 and 16 of aggregating the ingress traffic streams into a combined traffic stream without regard to any destination of any IP packet in any ingress traffic stream. As shown above, the Keller-Tuberg patent fails to disclose this limitation. Therefore, Applicant respectfully submits that Claims 26-33, 35-38, and 40 are patentably distinct from the Keller-Tuberg patent.

CONCLUSION

Applicant has clearly demonstrated that the present invention as claimed is clearly distinguishable over all the art cited of record, either alone or in combination, and satisfies all requirements under 35 U.S.C. §§101, 102, and 103, and 112. Therefore, Applicant respectfully requests the Board of Patent Appeals and Interferences to reverse the final rejection of the Examiner and instruct the Examiner to issue a notice of allowance of all claims.

The Commissioner is hereby authorized to charge any fees or credit any overpayments associated with this Application to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,
BAKER BOTTS L.L.P.
Attorneys for Applicant



Charles S. Fish
Reg. No. 35,870

September 2, 2008

Correspondence Address:
2001 Ross Avenue, Suite 600
Dallas, TX 75201-2980
(214) 953-6507
Customer Number: 05073

APPENDIX A

1. (Previously Presented) A method for processing traffic in an access network, comprising:

receiving a plurality of ingress traffic streams, each ingress traffic stream including a plurality of packets having a destination address, wherein the packets are Internet Protocol (IP) packets and each include an IP destination address;

aggregating the ingress traffic streams into a single combined traffic stream without regard to any destination of any packet from any ingress traffic stream; and

transmitting the combined traffic stream to a backbone network for routing.

2. (Canceled).

3. (Original) The method of Claim 1, further comprising:

receiving each of the ingress traffic streams from customer premise equipment (CPE); and

transmitting the combined traffic stream to a backbone router in the backbone network.

4. (Previously Presented) The method of Claim 1, further comprising:

validating IP packets in the ingress traffic streams; and

aggregating all valid packets into the combined traffic stream.

5. (Previously Presented) The method of Claim 1, further comprising:

routing IP packets of the ingress traffic streams to a network interface port of an access device; and

aggregating the IP packets into the combined traffic stream at the network interface port.

6. (Previously Presented) The method of Claim 1, further comprising:

receiving the ingress traffic streams at a plurality of customer premise equipment (CPE) ports;

segmenting at the CPE ports the IP packets in the ingress traffic streams into asynchronous transport mode (ATM) adaption layer (AAL) cells, wherein the AAL cells include either or both of a virtual private interface and virtual connection interface (VPI/VCI) ATM address generated from the IP addresses of the IP packets;

switching the AAL cells to a network interface port;

reassembling the IP packets from the AAL cells at the network interface port; and

aggregating the IP packets into the combined traffic stream.

7. (Original) The method of Claim 6, further comprising:

segmenting IP packets at each CPE port into sets of AAL cells having a fixed ATM address associated with the CPE port;

buffering the AAL cells at the network interface port based on their ATM addresses; and

reassembling the IP packets from completed sets of AAL cells.

8. (Canceled).

9. (Original) The method of Claim 6, wherein the IP packets are segmented into ATM adaption layer five (AAL-5) cells.

10. (Previously Presented) The method of Claim 1, further comprising:

receiving an egress traffic stream from the backbone network, the egress traffic stream including a plurality of IP packets each having an IP address;

determining a customer premise equipment (CPE) port for each IP packet based on its IP address;

routing the IP packets to their respective CPE ports; and

transmitting the IP packets from the CPE ports to their destination CPEs.

11. (Original) The method of Claim 10, further comprising determining the CPE ports for the IP packets using a static routing table.

12. (Previously Presented) The method of Claim 10, further comprising:

determining an asynchronous transport mode (ATM) address for each IP packet of the egress traffic stream based on its IP address;

segmenting each IP packet into a set of ATM adaption layer (AAL) cells having the ATM address for the IP packet;

switching the AAL cells to their respective CPE ports based on the ATM addresses; and

reassembling the IP packets from the AAL cells at each CPE port for delivery.

13. (Original) The method of Claim 12, further comprising:

buffering the AAL cells at each CPE port based on their ATM addresses; and

reassembling the IP packets from completed sets of AAL cells.

14. (Previously Presented) The method of Claim 12, wherein the ATM address comprises either or both of a virtual private interface and virtual connection interface (VPI/VCI) address.

15. (Original) The method of Claim 12, wherein the IP packets are segmented into ATM adaption layer five (AAL-5) cells.

16. (Previously Presented) A system for processing traffic in an access network, comprising:

means for aggregating a plurality of ingress traffic streams from customer premise equipment (CPE) into a single combined traffic stream for transmission to a backbone network; and

means for routing egress traffic received from the backbone network to CPEs using a static routing table, wherein the ingress and egress traffic include a plurality of Internet Protocol (IP) packets each having an IP address, the IP address of IP packets in the egress traffic stream used as an index to the static routing table, wherein the plurality of ingress traffic streams are aggregated into the single combined traffic stream without regard to any destination of any IP packet from any ingress traffic stream.

17. (Canceled).

18. (Previously Presented) The system of Claim 16, further comprising:

means for segmenting IP packets into asynchronous transport mode (ATM) adaption layer (AAL) cells, wherein the AAL cells include either or both of a virtual private interface and virtual connection interface (VPI/VCI) address generated from the IP addresses of the IP packets;

means for switching the AAL cells within the access network; and

means for reassembling the AAL cells into outgoing IP packets.

19. (Original) The system of Claim 18, wherein the IP packets are segmented into ATM adaption layer five (AAL-5) cells.

20. (Previously Presented) A method for routing traffic in an access network, comprising:

receiving ingress Internet Protocol (IP) packets from customer premise equipment (CPE), each IP packet having an IP address;

receiving egress IP packets from a backbone network for delivery to the CPE;

segmenting the ingress IP packets at a CPE interface of an access network into ingress asynchronous transport mode (ATM) adaption layer (AAL) cells, wherein the ingress AAL cells include either or both of a virtual private interface and virtual connection interface (VPI/VCI) address generated from the IP addresses of the IP packets;

segmenting the egress IP packets at a network interface into egress AAL cells;

providing the egress AAL cells to the customer premises equipment;

aggregating the ingress AAL cells in the access network into a single combined traffic stream without regard to any destination of any packet from the customer premises equipment.

21. (Original) The method of Claim 20, wherein the IP packets are segmented into ATM adaption layer five (AAL-5) cells.

22. (Original) The method of Claim 20, further comprising reassembling the AAL cells into IP packets at a periphery of the access network.

23. (Original) The method of Claim 22, further comprising delineating the IP packets.

24. (Original) The method of Claim 22, further comprising validating the IP packets.

25. (Original) The method of Claim 22, further comprising dropping defective IP packets.

26. (Previously Presented) A system for processing traffic in an access network, comprising:

logic stored in a computer processable medium; and

the logic operable to receive a plurality of ingress traffic streams, each ingress traffic stream including a plurality of Internet Protocol (IP) packets having an IP address, aggregate the ingress traffic streams into a combined traffic stream without regard to any destination of any IP packet in any ingress traffic stream, and transmit the combined traffic stream to a backbone network for routing based on the IP addresses.

27. (Original) The system of Claim 26, the logic further operable to receive each of the ingress traffic streams from customer premise equipment (CPE).

28. (Original) The system of Claim 26, the logic further operable to transmit the combined traffic stream to a backbone router in the backbone network.

29. (Original) The system of Claim 26, the logic further operable to validate IP packets in the ingress traffic stream and to aggregate all valid packets into the combined traffic stream.

30. (Original) The system of Claim 26, the logic further operable to route IP packets in the ingress traffic streams to a network interface port of an access device and to aggregate the IP packets into the combined traffic stream at the network interface port.

31. (Previously Presented) The system of Claim 26, the logic further operable to receive the ingress traffic streams at a plurality of customer premise equipment (CPE) ports, segment at the CPE ports the IP packets in the ingress traffic streams into asynchronous transport mode (ATM) adaption layer (AAL) cells, switch the AAL cells to a network interface port, reassemble the IP packets from the AAL cells at the network interface port and aggregate the IP packets into the combined traffic stream, wherein the AAL cells include either or both of a virtual private interface and virtual connection interface (VPI/VCI) address generated from the IP addresses of the IP packets.

32. (Original) The system of Claim 31, wherein the IP packets are segmented into ATM adaption layer five (AAL-5) cells.

33. (Original) The system of Claim 31, the logic further operable to segment IP packets at each CPE port into sets of AAL cells having a fixed ATM address associated with the CPE port, buffer the AAL cells at the network interface port based on their ATM addresses, and reassemble the IP packets from completed sets of AAL cells.

34. (Canceled).

35. (Original) The system of Claim 26, the logic further operable to receive an egress traffic stream from the backbone network, the egress traffic stream including a plurality of IP packets each having an IP address, determine a customer premise equipment (CPE) port for each IP packet based on its IP address, route the IP packets to their respective CPE ports and transmit the IP packets from the CPE ports to their destination CPEs.

36. (Original) The system of Claim 35, the logic further operable to determine the CPE ports for the IP packets using a static routing table.

37. (Original) The system of Claim 35, the logic further operable to determine an asynchronous transport mode (ATM) address for each packet based on its IP address, segment each IP packet into a set of ATM adaption layer (AAL) cells having the ATM address for the IP packet, switch the AAL cells to their respective CPE ports based on the ATM addresses and reassemble the IP packets from the AAL cells at each CPE port for delivery based on their IP addresses.

38. (Original) The system of Claim 37 the logic further operable to buffer the AAL cells at each CPE port based on their ATM addresses and reassemble the IP packets from completed sets of AAL cells.

39. (Canceled).

40. (Original) The system of Claim 37, wherein the IP packets are segmented into ATM adaption layer five (AAL-5) cells.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None

CERTIFICATE OF SERVICE

None